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APPLICABILITY OF COMPOSITE INDICES OF NUTRITIONAL STATUS IN ELDERLY HEMODIALYIS PATIENTS

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The composite indices of nutritional status have been largely applied to assess protein energy wasting (PEW) in hemodialysis (HD) patients, but the applicability in elderly HD patients remains unknown. We aimed to assess whether the prevalence of PEW differs depending on the composite indice applied and, to evaluate the concurrent concordance between the composite indices and objective methods of nutritional status. Sixty-four elderly HD patients (male 72%; 70 ± 3, 4 years old) were included. The indices chosen were those validated for HD and/or with high applicability in clinical practice: 7 points subjective global assessment (7p-SGA), malnutrition inflammation score (MIS), the criteria proposed by the International Society in Renal Nutrition and Metabolism (ISRNM) and the mini-nutrition assessment (MNA). For 7p-SGA and MIS, PEW was defined as score ≤ 5 and > 6, respectively. The objective parameters used to evaluate the concurrent concordance were BMI, body fat % (B Fat; skinfold thicknesses), phase angle (P Angle; BIA), handgrip strength (HGS; dynamometer) and serum albumin. The prevalence of PEW and the objective methods which values differed significantly between well-nourished (WN) x PEW patients across the 4 composite indices are described below:

	7p-SGA	MIS	IRSNM	MNA
PEW (%)	53%	81%	28%	20%
	WN x PEW	**WN x PEW**	**WN x PEW**	**WN x PEW**
BMI	NS	NS	< 0.05	NS
B fat %	< 0.05 [2]	< 0.05 [1,2]	< 0.05 [1,2]	< 0.05 [2]
P Angle	NS	< 0.05 [1]	< 0.05 [1]	NS
HGS	NS	NS	NS	NS
Albumin	NS	NS	NS	NS

NS: not significant; [1] for male; [2] for female

A large variation in the prevalence of PEW was observed among the composite indices. No composite indice agreed concurrently with all objectives methods. The IRSNM, followed by the MIS had the greater concordance with the objective methods in elderly HD patients.

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VALIDATION OF THE SUBJECTIVE GLOBAL ASSESSMENT AND MALNUTRITION INFLAMMATION SCORE TRANSLATED TO PORTUGUESE FOR ELDERLY PATIENTS ON HEMODIALYSIS.

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We aimed to validate the translation of the 7 point subjective global assessment (7 p-SGA) and malnutrition inflammation score (MIS) from English to Portuguese to be applied for elderly patients on hemodialysis (HD). For the translation, the back-translation method was used. First, two independent bilinguals renal dietitians (Portuguese native speakers) worked independently to translate the 7 p-SGA and MIS to Portuguese. After that, the final version was back translated to English by a bilingual English teacher (Portuguese native speaker). In order to investigate the conceptual and semantic equivalence of the translated version, a renal dietitian (English native speaker) compared each item of the original English version of the 7 p-SGA and MIS to the back translated English version by rating the similarity between both questionnaires from 1 to 100 (being 100 the highest degree of similarity). The degree of similarity was 96.8 ± 7.8 for 7p-SGA and 99.6 ± 1.4 for MIS, indicating that the Portuguese versions had equivalent meaning to the original English version. We then performed the validation of the Portuguese version by assessing the concurrent concordance of both nutritional composite indices with objective methods (BMI, body fat %, phase angle, handgrip strength and albumin) in 64 elderly patients on HD (male 72%; 70 ± 3 years old). The 7p-SGA was rated as well nourished (score 7-6; n= 30); mildly to moderately malnourished (5-3; n= 34) and severely malnourished (2-1; no patient). The MIS was rated as normal nutrition (score: 0–5; n= 12); mild malnutrition (6–10; n= 38), and moderate-to-severe malnutrition (≥ 11; n= 14). Among the objective methods, only body fat % differed (P < 0.05) between well-nourished and malnourished patients for the 7p-SGA, and for MIS, the same was observed only for body fat % and phase angle. In conclusion, these preliminary results suggest that for elderly patients on HD, the scores proposed by the 7p-SGA and MIS for screening patients with protein energy wasting should be reviewed.

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PREVALENCE OF SARCOPENIA IN ELDERLY PATIENTS ON HEMODIALYSIS.

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Sarcopenia is strongly associated to aging and can be defined as a decrease in muscle mass, strength and muscle quality. Hemodialysis (HD) patients are exposed to several factors that lead to a loss of muscle mass, which in turn can accelerate the development of sarcopenia. We aimed to evaluate the prevalence of sarcopenia and to compare the nutritional and inflammatory profile of sarcopenic and non-sarcopenic elderly patients on HD. Seventy-four elderly patients on HD (68.9% male; age: 69.3 ± 6.4 years) were included. Sarcopenia was defined by a handgrip strength (HGS) < 10th percentile of a Brazilian population-based reference study. Obesity was defined as body fat % (sum of skinfold thicknesses) above the median values for men (≥ 26%) and women (≥ 39%); abdominal obesity as waist circumference ≥ 102 cm in men and ≥ 88 in women and inflammation (ultra sensitive C-reactive protein -CRP) as CRP ≥ 10 mg/L. Sarcopenia was observed in 41% of the patients. No significant difference was observed between Sarcopenic (n= 30; Male 67%; Age 69 ± 6.2 years; BMI 24.5 ± 4.9 kg/m^2) and non-sarcopenic (n= 44; Male 73%; Age 69.7 ± 6.6 years; BMI: 26.2 ± 4.5 kg/m^2) groups, as shown below:

	Sarcopenic Group (n= 30)	Non-Sarcopenic Group (n= 44)
Diabetes (n; %)	12 (40)	13 (30)
Obesity (n; %)	13 (43)	24 (55)
Abdominal Obesity (n; %)	10 (33)	21 (48)
Inflammation (n; %)	8 (27)	9 (20)

In conclusion, sarcopenia is highly prevalent in elderly HD patients and the inflammatory profile of sarcopenic and non-sarcopenic patients is similar. In addition, these results show that sarcopenia does not exclude the occurrence of increased adiposity, as shown by the elevated frequency of obesity and abdominal obesity in the elderly sarcopenic group.

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NLRP3-MEDIATED RENAL LIPID ACCUMULATION OCCURS DURING EARLY DEVELOPMENT OF DIET-INDUCED CHRONIC KIDNEY DISEASE

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Metabolic syndrome (MetSyn) is an important risk factor for the development of chronic kidney disease (CKD). Metsyn-driven CKD is characterized by a state of chronic low-grade inflammation and the innate immune receptor Nlrp3 mediates inflammation. Therefore, we investigated the role of Nlrp3 on the development of Metsyn-driven CKD.

Nlrp3 -/- (Nlrp3ko) and wild-type C57BL/6J (wt) mice (n=8 per group) were subjected to either a control diet or a Western diet (WD) containing increased fat and cholesterol levels. Diets continued for 16 weeks after which mice were sacrificed. A Western diet induced Metsyn in both wt and Nlrp3ko mice to a similar extent. Although renal function was preserved, the development of CKD was established in wt WD mice as reflected by the presence of micro-albuminuria, inflammation and fibrosis. No development of CKD could be seen in Nlrp3ko mice fed a WD. Development of Metsyn-driven CKD was observed together with an increase in vacuolated proximal tubuli, renal cholesterol and